

1. Guidelines for User Applications for Access to the FAAM BAe146 Atmospheric Research Aircraft

1. Introduction

- 1.1 This section is intended to provide guidance to users of the FAAM BAe146 research aircraft and associated ground-based facilities, and outlines the routes and mechanisms controlling such access. Potential users include those who come from NERC- and National Centre for Atmospheric Sciences (NCAS) - supported researchers, Met Office research staff, and all other non-UK research or commercial organisations. Procedures for access via all funding routes are detailed below.
- 1.2 NERC support is provided via Research/Consortium Grants and Research Programmes (RP), requiring formal application by means of a science case and justification of resources required to achieve the scientific outcomes, and which is assessed by the appropriate Grant Moderating Panel or RP Steering Committee, the appropriate Grant Moderating Panel or RP Steering Committee assesses. The Panel or Committee will assess the quality of science and the levels of resourcing sought before approving access to the Facility. Potential users are advised to consult the NERC Grants¹ and Fellowship² Handbooks for full details regarding their eligibility for such support.
- 1.3 In all cases, FAAM **must** be consulted in depth prior to any resource application. Potential users should be aware of the lead-times in achieving access to FAAM. Facility capacity is about 500 flight hours per year, which limits the number of campaigns that can be supported, and the likely lead-time between initial consultation with FAAM and execution of a campaign is normally a minimum of 12 months. Users seeking resourcing via NERC research grant mechanisms should be aware that the interval between application by means of Joint electronic Submission (Je-S) and notification of the outcome is a minimum of 6 months.

2. Access

- 2.1 User access to the FAAM BAe146 research aircraft is supported via five mechanisms:
 - (i) By NERC under the terms relating to Research and Consortium Grants and Research Programmes.
 - (ii) By the National Centre for Atmospheric Sciences (NCAS) as a component of NCAS Core Science activities;
 - (iii) By Met Office funding for observations based research; and
 - (iv) By means of user-payment for flight hours and support services (usually funded by another body such as a UK Research Council/ European equivalent, or the European Commission) .
 - (v) By BAES Private Venture work requiring some FAAM support. BAES are contractually entitled to use the aircraft for their own purposes at agreed times; levels of FAAM support are negotiable with NERC/MO.
- 2.2 In all cases, potential users must apply to the FAAM Operations Manager for guidance on available access periods, technical issues, potential Superstructure costs (see para 4), and issue of a FAAM Application Form.

- 2.3 Under 2.1(i), users will need first to comply with the requirements of 2.2 and then make application for NERC support, appending the FAAM application form to their Research, Consortium Grant or RP electronic Je-S application form.
- 2.4 Under 2.1(ii), potential users need first to discuss with Director NCAS the relevance of the proposed science to the NCAS Core Science programme, gaining approval for support before applying to FAAM as required by 2.2.
- 2.5 Under 2.1(iii), internal Met Office users are granted provisional access with the approval of Head Observations Based Research.
- 2.6 Under 2.1(iv), users already in receipt of non-NERC/NCAS/Met Office funds may make direct application to FAAM. Head of FAAM will contact the Met Office and NERC and a decision will be made on whether to undertake the work and which partner will provide the contractual link. Such commissioned projects will normally be charged at Full Economic Cost (FEC); however depending on the level of NERC/NCAS or Met Office interest in the science being undertaken it may be possible to negotiate a “science” rate falling below FEC. This however is an internal agreement between the applicant and NERC/NCAS or the Met Office. In the case of work funded partially by the EC FAAM (via the FAAM Board) will endeavour to ensure a consistent pricing arrangement. . (If there is no NERC-Met Office interest, such 3rd Party work may be offered to BAE Systems as Private Venture work under the terms of the Contract for the Provision and Operation of an Atmospheric Research Aircraft – see 2.6 below).
- 2.7 Under 2.1(v), BAES may for agreed periods use the aircraft independently of FAAM. However some of this Private Venture Work may require FAAM scientific or management expertise. This can be refused but if accepted it would be treated as item 2.1(iv) where the partners NERC and/or Met Office will seek full financing benefit from their collaboration with BAES. As there already exists a contractual arrangement between NERC and BAES it would be expected that that mechanism would be used to transfer funds between BAES and FAAM: however each case would be assessed on its merits and it may be necessary for a direct contract between BAES and the Met Office be put in place.

3. Resources

- 3.1 Resourcing for FAAM operations is derived as follows:
 - (i) Infrastructure (offices, laboratories, core scientific instrumentation and support staff) are funded centrally by NERC Swindon Office and Met Office;
 - (ii) Flight Hours (direct aircraft operating costs including fuel), are funded centrally by Swindon Office via annual allocations in support of responsive research, NCAS in support of Core Science projects, and Met Office in support of Observations Based Research projects.
 - (iii) Superstructure costs (additional costs associated with operations away from Home Base at Cranfield Airport or in extended hours at Cranfield), funded by the user via grant allocations or other mechanisms.

- 3.2 In NERC/NCAS terms, infrastructure support is free-at-point-of-access for all proposals except Direct Access (commissioned) projects and BAES Private Venture Work. For campaigns based entirely at Cranfield Airport, users will need normally only to secure allocation of, or funding for, the Flight Hours required for a successful campaign (comprising test flights and science flying) and T&S for support of their own activities. For campaigns based at Cranfield and elsewhere that require out-of-hours activity and outlandings for fuel, users will need to secure Superstructure costs (normally in the form of a daily rate estimated by FAAM at the initial application stage – see para 4) and any other consumables such as dropsondes.
- 3.3 In Met Office terms, the distinction between these 3 areas is not relevant. NERC recovers the full costs from the Met Office through a cost sharing agreement.

4 Definition of Infrastructure and Superstructure.

- 4.1 *Infrastructure* relates to services and activities that form the fixed level of service that can be expected when a customer organisation uses FAAM for measurement purposes. These Infrastructure items should be taken as the services that are provided in parallel with the allocated flying hours, typically from Cranfield. The costs associated with these services jointly supported by NERC/MO (J), unless indicated in

Table 1 below.

Table 1. Provision of Infrastructure

<ul style="list-style-type: none"> - Flight pay for FAAM staff - Normal Working Hours airfield services at Cranfield - Operation of Core instruments and production of Core data products - Ascertained Services relating to Core instruments - FAAM staff support during Conditioned Working Hours - Provision of aircraft power and access to the aircraft during Normal Working Hours on Potential Flying Days - Flight planning, flight and diplomatic clearance services when operating from Home Base - Travel and subsistence for FAAM staff to attend offsite meetings, conferences, training sessions etc that are not specific to a particular science campaign - Directflight and Avalon staff invited to meetings at Cranfield during Normal Working Hours - Personal development and training expenses for FAAM staff - Use of allocated accommodation and IT provision at Cranfield - In-Flight catering when operating from Home Base - Ground handling and support facilities when landing out for refuel due to unforeseen operational constraints - Navigation and airport charges when landing out for refuel due to unforeseen operational constraints - Production of Cranfield security passes - Aircraft instrument configuration to meet the combined need of MO/NERC

- 4.2 *Superstructure* covers all those activities and services that not included within Infrastructure and which are provided over and above those tasks carried out within Normal Working Hours at Cranfield. It includes all

detachment activities and costs that would not have occurred if the aircraft were to be operating from Cranfield. All superstructure costs are attributable to the science campaign or campaigns being conducted (“P¹”), be they the result of a single flight or a period on detachment. Table 2 below shows typical project infrastructure costs, although it is always prudent to check their accuracy and validity for any particular campaign.

Table 2. Typical Superstructure Costs

Activity	Typical/estimated cost (if available)
Flight Hours & Fuel costs	~£5400/hr
Airfield services at Cranfield outside of Normal Working Hours FAAM staff support outside of Conditioned Working Hours, including, where applicable, overtime.	Cost
Provision of aircraft power and access to the aircraft outside of Normal Working Hours on Potential Flying Days	~£100/hr
Flight and diplomatic clearance services when operating from locations other than Home Base	Cost
Travel and subsistence for FAAM staff to attend offsite meetings and conferences etc that are specific to a particular science campaign	Cost
Travel and subsistence for Directflight and Avalon staff to attend campaign-related conferences and meetings etc other than those at Cranfield during Normal Working Hours	Cost + 10%
Ground handling and facilities when landing out for refuel due to specific science campaign requirements	~£500/landing
Navigation and airport charges when landing out for refuel due to specific science campaign requirements	~£400/landing
Design, engineering and Ascertained Services relating to the modification of non-Core instruments (including Certification and Service Bulletins)	Cost, consult with Technical Manager
Ascertained Services relating to the maintenance and repair of non-core instruments	Cost, consult Technical Manager
Aircraft instrument configuration changes to meet the specific needs of a particular science campaign or flight	Cost, consult Technical Manager
Dropsondes	£500/sonde
SATCOM-H use	Cost, consult FAAM Admin
Health and safety expenses (e.g. inoculation) for FAAM, Directflight and Avalon staff as required	Cost
Advance location reconnaissance expenses	T&S for 3-4 people for 2-3 days in area

¹ J means treated as Joint between Met Office and NERC, P means project specific in the Met Office and NERC agreement – plus flight activity

Activity	Typical/estimated cost (if available)
Travel to/from detachment location for FAAM Directflight and Avalon staff	T&S, typically using economy flights but with reasonably simple routings. Allow for 1-2 days acclimatisation, depending upon change in time zone and climate
Local communications provision and charges	~£80/day
International communications provision and charges, including internet	~£100/day
In flight catering whilst detached	~£100/flight
Local transport	~£150/night
Visa costs	Check with relevant embassies
Shipping costs for FAAM, Directflight and Avalon essential equipment, including import/export charges and taxes	Cost – consult FAAM admin
Airport handling/parking	~£100/day
Hangarage	~£1000/day
Landing charges	~£300/landing
Specific training needs for unusual flying tasks	Cost + 10% consult DFL
Navigation charges	~£200/country
Ground handling charges and facilities, including, where appropriate, air conditioning or heating	Cost
Out of hours costs for Avalon services	Cost + 10% consult DFL
Directflight duty pay	~£120/day
Airport passes	~£20/person
Currency exchange costs	
Additional Engineering Support (required for intensive flying programmes)	~ £250/day

5. Summary of Procedures

5.1 NERC Research Grants (see table 3 for sequence & timing of actions):

- (i) Discussion with FAAM to establish feasibility, scheduling and levels of resourcing followed by generation and approval by FAAM of FAAM application form;
- (ii) Application to NERC by means of Je-S for Flight Hours, Superstructure and dropsondes via standard Research and Consortium Grants mechanisms, supported by approved FAAM application form;
- (iii) Technical and programme scrutiny by FAAM Operations Committee and recommendation to the Head of FAAM;
- (iv) Scientific review by Moderating Panels and approval of allocation of resources (Flight Hours, Superstructure and dropsondes);
- (v) Notification by Swindon Office Research Grants Team of support and allocation of requested resources on the basis of Moderating Panel recommendations.; and
- (vi) Confirmation of project scheduling in FAAM flying programme.

**Table 3 - Stages in Assessing FAAM User Requirements and Initiation of Projects
 (NERC R/C Grants and RP)**

Timing (approximate and will vary according to circumstances)	Brief Description	Persons Responsible/ Involved	Notes
6 months before Research/Consortium Grant or Research Programme submission	Initial contact	Ops Manager, PI	First briefing of Ops Manager, usually via phone or email. This first contact provides the Ops Manager with an initial idea of what might be involved and when the project might run. It allows the Ops Manager to feed back immediate thoughts on constraints such as timing or feasibility in terms of instruments and/or aircraft configuration
2-6 months before R/CG or RP submission	Outline discussion and issue of form	Ops Manager, Tech Manager, PI	Sufficient discussions to enable the project team to submit the FAAM form with sufficient detail to be assessed. . Issue of FAAM Application Form to PI. Allocation of a provisional flying window.
1-4 months before RG submission	Detailed discussions	Ops Manager, Tech Manager, HoF, PI and team	Detailed discussion of draft FAAM form via tele- or videoconference. The scale of this would be dependent on the experience of the user team and on whether the proposed project might break new ground in terms of FAAM requirements. A face-to-face meeting will only be necessary if the team is inexperienced or if there are real doubts as to whether FAAM can Support the project at the level required.
2 weeks before R/CG or RP deadline, or earlier if availability of personnel dictates.	Form received by FAAM	FAAM, PI	Form signed off by FAAM. There should be no surprises at this stage as all resourcing requirements (flight hours, instrument fit, superstructure) should be sufficiently refined by this stage to provide reasonably accurate cost, feasibility and scheduling information to support the RG application. Also by this stage, initial risk assessments must have been carried out, and judged acceptable.
R/CG or RP round deadline (1 December and 1 July for R/CG)	Proposal submitted	PI, HARF	PI includes FAAM Application form in JeS form. Ops Manager to ensure that HARF receives a signed-off copy of the FAAM form.
3 months after deadline	First RG sift	Awards & Training	Awards and Training inform PI that the proposal is going to external review. PI to inform Ops Manager and HARF
Between first sift and Moderating Panel meeting	More detailed discussion <i>Discretionary</i>	Ops Manager, Tech Manager, Logistics Manager, HoF, PI team	Sufficient additional discussion – especially of logistics and FAAM infra- and superstructure implications - (if required) in order that Ops Manager can inform HARF of any information which should go before the panel, or requires consultation with Awards. This will depend on circumstances
Moderating Panel or RP Steering Committee meeting	Peer-review	PR panel, HARF	HARF to supply to Panel any additional information which could have a bearing on the decision for support and allocation of resources
Awards Team Finance meeting	Decision	Panel	Funding approved. The project will go ahead.

Next available meeting	Ops Committee	Ops Manager, Chair of Ops Cttee	Ops Manager will have already allocated a notional slot in the flying timetable ahead of submission of the proposal. This can now be discussed and confirmed by Ops Committee.
From 12 months prior to project start, ongoing until project is completed.	Detailed planning	Ops Manager, Tech Manager, Logistics Manager, HoF, PI rep., Detachment Manager	All necessary liaison in order to ensure that project team and FAAM have all required information and understanding. FAAM will bring in DFL where required.
6-12 months before detachment	Reconnaissance	Ops Manager, Logistics Manager, DFL	Scope and timing depend on the scale of the project and whether FAAM has worked at the location previously.
3-6 months before project start	Presentation to FAAM	PI, HoF	Presentation by PI and science team to all of FAAM to inform and discuss with FAAM technical teams the aims of the project, the modes of working and the requirements for successful completion of the project.
Start Date	Project initiation	FAAM, DFL, PIs, Scientific Team	FAAM deploys – campaign within agreed schedule

5.2 NERC Research Programmes (see table 3 for sequence & timing of actions):

- (i) Discussion with FAAM to establish feasibility, scheduling and levels of resourcing followed by generation and approval by FAAM of the FAAM application form;
- (ii) Application to Directed Programme via Je-S, for support (Flight Hours, Superstructure, dropsondes), supported by an approved FAAM application form;
- (iii) Technical and programme scrutiny by FAAM Operations Committee and recommendation to Head of FAAM;
- (iv) Discussion and agreement by Head Airborne Research Facilities and Programme Manager on levels of contribution to be made by the RP to the Flight Hours component;
- (v) Scientific and strategic review by Steering Committees and approval of resources (Flight Hours, Superstructure and dropsondes);
- (vi) Notification by Swindon Office Research Grants Team of support and allocation of requested resources on the basis of Steering Committee recommendations.; and
- (vii) Confirmation of project scheduling in FAAM flying programme.

5.3 National Centre for Atmospheric Science (NCAS):

- (i) Consultation with, and in-principle approval by Director NCAS;
- (ii) Discussion with FAAM and generation and approval by FAAM of FAAM application form;
- (iii) Formal application to Director NCAS supported by FAAM application form;
- (iv) Scientific and strategic review by Director NCAS and approval of resources (Flight Hours, Superstructure, dropsondes);
- (v) Technical and programme scrutiny by FAAM Operations Committee and recommendation to the Head of FAAM;
- (vi) Confirmation of project scheduling in FAAM flying programme on basis of Director NCAS recommendations.

5.4 Met Office:

- (i) The Met Office programme of research will outline the areas of work but generally not at the level of specific flight campaigns. Broad agreement to a proposal will arise out of OBR Management meetings taking into account the aircraft availability and current budget;
- (ii) Discussion with FAAM and generation of FAAM application form;
- (iii) Technical scrutiny by FAAM Operations Committee and recommendation to the Head of FAAM;
- (iv) Confirmation of project scheduling in FAAM flying programme on basis of recommendations by Head Observational Based Research. This confirmation is reviewed continuously in the light of the Met Office financial position.

5.5 Direct Access:

- (i) Discussion with Head of FAAM on requirements;
- (ii) Negotiation between NERC and Met Office on whether to undertake work and whether NERC or Met Office will “sponsor” and contract with third party;
- (iii) Discussion with FAAM and generation of FAAM application.
- (iv) Technical scrutiny by FAAM Operations Committee and recommendation to the Head of FAAM;
- (v) Negotiation between third party and NERC or Met Office to contract on the basis of costings that reflect the scientific interest of the sponsoring Partner (minimum Direct Operating Cost);
- (vi) Confirmation of project scheduling in flying programme by NERC or Met Office, as appropriate, on the basis of the FAAM Operations Committee recommendation.

5.6 BAeS Private Venture with FAAM support

- (i) Negotiation between NERC and Met Office on whether to undertake work and whether NERC or Met Office will “sponsor” and contract with BAeS. (In most cases it is anticipated that the contract will be with NERC)
- (ii) Identification of required levels of FAAM support, agreement between resulting costs and how to charge BAeS
- (iii) Note that this section differs from the direct access mechanism in 5.5 in that BAeS already have agreed timeslots for their access to the aircraft.

6. Detailed Application Procedures

6.1 *Common requirements for all mechanisms*

6.1.1 Potential users should be aware of the lead-times inherent in making application for access to FAAM. These are a function both of aircraft/facility capacity per year and the various Met Office, NCAS and NERC application procedures. In the case of NERC Research/Consortium Grants and Research Programmes, the NERC Grants Handbook should be consulted for details of eligibility and procedures for securing resources. In the case of NCAS and Met Office access, users are advised to discuss their applications with the Director NCAS and Head OBR prior to consultation with FAAM, in order to confirm in principle the availability of the required resources.

6.1.2 All applicants for access to FAAM facilities **must** contact the FAAM Operations Manager for initial advice regarding feasibility and potential scheduling of campaigns. The Operations Manager will issue a FAAM application form in which the user will summarise the scientific rationale and outline campaign requirements (including quantification of test/transit/science flight hour needs, preferred and acceptable timing of activities, identification of scientific instrumentation, and estimate of likely Superstructure and consumable costs such as dropsondes). On agreement in principle that the science activities can be supported by FAAM, the Operations Manager and Head of FAAM will approve and sign off the application form, and the campaign will be scheduled on a preliminary basis contingent on approval or agreement of resourcing/funding.

6.2 *NERC Research and Consortium Grants*

6.2.1 For users seeking access via NERC Research/Consortium Grants, Infrastructure facilities are provided free of charge. Flight Hours, Superstructure and consumable requirements are assessed via standard Research/Consortium Grants and RP mechanisms, and are contingent on award of science grade by the relevant Moderating Panel.

6.2.2 Users seeking access via the Research/Consortium Grant route **must** ensure that the procedure outlined in 5.1 is completed **prior** to submitting to Swindon Office their application for research support: the FAAM application form must be appended to the standard NERC Je-S electronic submission (the grant application will be frozen should the FAAM form be missing). Flight Hour requirements should be clearly stated in the Research Grant application, with a breakdown of flying segments (test and science flying, and any transit flying) and a clear identification of the supplementary Superstructure and dropsonde costs under “Other Directly Incurred Costs”.

6.2.3 In parallel with Research/Consortium Grant mechanisms, the FAAM Operations Committee will, in consultation with the applicant, subject to technical scrutiny pending applications for access in order to assess potential for the most efficient and economical support,. Criteria include commitments made in support of approved campaigns, overall configuration of the aircraft at the preferred time, availability of Core science instruments, and potential need for certification and fit of user-provided equipment. Potential users are encouraged by the Operations Committee to discuss with other applicants the potential for sharing of access and resources (including data outputs), in order to maximise efficiency of deployments and of available resourcing. The Operations Committee will also consider the opportunity for use of alternative

NERC airborne facilities and platforms and provide technical comment for the benefit of the Moderating Panels.

- 6.2.4 Applications via the Research/Consortium Grant route will be subject to full scientific and technical scrutiny via international and national peer-review and subsequent discussion by the appropriate NERC Moderating Panel (guided by technical and operational comment from the FAAM Operations Committee), and awarded an alpha- grade upon which funding/resourcing is contingent.
- 6.2.5 Users supported by NERC Research Grants will be notified via an Award Letter from Swindon Office Research Grants Team clearly stating the maximum allocation of Flight Hours agreed by the Moderating Panel, and awarding Superstructure and dropsonde costs on a notional basis to be transferred internally to FAAM. On receipt of copy of the Award Letter, FAAM will confirm the scheduling of the campaign, subject to any overriding technical and/or operational constraints in terms of aircraft configuration and scheduling that may require flexibility on the part of the user.

6.3 NERC Research Programmes

- 6.3.1 For users seeking access via Research Programmes, Infrastructure facilities are provided free of charge. Requested Flight Hours and Superstructure costs require approval and award by the relevant RP Steering Committee.
- 6.3.2 Users seeking access via Research Programmes **must** ensure that the procedure in 5.1 is completed **prior** to consideration by the Programme Steering Committee. In general the Flight Hour requirements of the RPs will be accommodated as far as is possible via the resources available to Swindon Office and NCAS; however this support could be limited by demand from Grants and Core programmes. In such a case, RP Programme Managers and potential users should be aware that whilst every effort will be made to accommodate their requirement for flight hour allocation, it may be necessary for the RP to budget for the cost of all or a contribution to Flight Hour resourcing. Directed Programme Managers must consult with Head Airborne Research Facilities regarding availability of sufficient Flight Hour resources and if necessary budget for the costs prior to committing to support for any RP project. In all cases, the RP must provide Superstructure and dropsonde costs.
- 6.3.3 In parallel with RP mechanisms, the FAAM Operations Committee will, in consultation with the applicant, subject to technical scrutiny pending applications for access in order to assess potential for the most efficient and economical support. Criteria include commitments made in support of approved campaigns, overall configuration of the aircraft at the preferred time, availability of Core science instruments, and potential need for certification and fit of user-provided equipment. Potential users are encouraged by the Operations Committee to discuss with other applicants the potential for sharing of access and resources (including data outputs), in order to maximise efficiency of deployments and of available resourcing. The Operations Committee will also consider any opportunity for use of alternative NERC airborne facilities and platforms, and provide technical comment to the RP Steering Committee.

6.3.4 Users supported by Research Programmes will be notified via an Award Letter from Swindon Office Research Grants Team clearly stating the maximum allocation of Flight Hours agreed by the Moderating Panel, and awarding Superstructure and dropsonde costs on a notional basis to be transferred internally to FAAM. On receipt of copy of the Award Letter, FAAM will confirm the scheduling of the campaign, subject to any overriding technical and/or operational constraints in terms of aircraft configuration and scheduling that may require flexibility on the part of the user.

6.4 National Centre for Atmospheric Sciences

6.4.1 For users seeking access via NCAS, Infrastructure facilities are provided free of charge. Requested Flight Hours require approval by Director NCAS, and **users must ensure that any Superstructure and analytical costs are available to support flying and research activities.**

6.4.2 Users supported by NCAS must ensure that the procedure in 5.1 is completed prior to application for support to Director NCAS.

6.4.3 In parallel, the FAAM Operations Committee will, in consultation with the applicant, subject to technical scrutiny pending applications for access in order to assess potential for the most efficient and economical support. Criteria include commitments made in support of approved campaigns, overall configuration of the aircraft at the preferred time, availability of Core science instruments, and potential need for certification and fit of user-provided equipment. Potential users are encouraged by the Operations Committee to discuss with other applicants the potential for sharing of access and resources (including data outputs), in order to maximise efficiency of deployments and of available resourcing. The Operations Committee will also consider any opportunity for use of alternative NERC airborne facilities and platforms. Finally, technical comment will be provided to the Director NCAS.

6.4.4 Director NCAS will notify users securing NCAS support.

6.5 Met Office

6.5.1 The Met Office manages its budget for flight, superstructure and consumable costs for its utilisation of FAAM together with a budget for instrument maintenance and development of its non-core instrumentation.

6.5.2 Met Office users must ensure that the procedure in 5.1 is completed prior to the final approval by Head Observational Based Research.

6.5.3 In parallel, the FAAM Operations Committee will, in consultation with the applicant, subject to technical scrutiny pending applications for access in order to assess potential for the most efficient and economical support. Criteria include commitments made in support of approved campaigns, overall configuration of the aircraft at the preferred time, availability of Core science instruments, and potential need for certification and fit of user-provided equipment. Potential users are encouraged by the Operations Committee to discuss with other applicants the potential for sharing of access and resources (including data outputs), in order to maximise efficiency of deployments and of available resourcing. The Operations Committee will also consider any potential for use of alternative airborne facilities and platforms.

Finally, technical comment will be provided to Head, Observational Based Research (OBR).

6.6 Direct Access

- 6.6.1 Users seeking direct access will normally be charged at a rate based on Full Economic Cost (FEC) or a partial rate (“science” cost), on the basis of overheads generated through Infrastructure provision and the total aircraft operating costs (Flight Hours/fuel), plus any Superstructure and consumable costs incurred through provision of services or facilities away from Cranfield or outside normal hours. “Science” costs are negotiable prior to confirmation of access.
- 6.6.2 Users seeking direct access are required to comply with the procedure in 6.1. Head of FAAM will advise applicants on whether they should contract with NERC or Met Office to secure access. Access will be provided through a formal arrangement with either NERC or the Met Office. Although Hd(FAAM) can provide provisional costing these will not be binding and must be separately negotiated with either NERC or the Met Office. At this stage, cost of access must be negotiated with Head of FAAM who will act on behalf of Head of Airborne Research Facilities, Director NCAS and Met Office Head of Observation-Based Research in determining potential levels of scientific interest to the funding partners, and likely impact on core science activities.
- 6.6.3 In parallel, the FAAM Operations Committee will subject to technical scrutiny all pending applications for access in order to assess potential for the most efficient and economical support, in consultation with the applicant. Criteria include commitments made in support of approved campaigns, overall configuration of the aircraft at the preferred time, availability of Core science instruments, potential need for certification and fit of user-provided equipment, and the likely impact of direct access projects on core NERC/NCAS and Met Office science programmes. Potential users are encouraged by the Operations Committee to discuss with other applicants the potential for sharing of access and resources (including data outputs), in order to maximise efficiency of deployments and of available resourcing. The Operations Committee will also consider the levels of NERC or Met Office scientific interest in the proposal and advise Head of FAAM with a view to determining the level of “science” cost to be negotiated., as well as any potential for use of alternative airborne facilities and platforms. Technical comment will be provided to Head of FAAM, the Head of Airborne Research Facilities, Director of NCAS, and/or Head of Observations -Based Research as appropriate.
- 6.6.4 Users seeking direct access will be notified by Head Airborne Research Facilities, or Head Observations Based Research as appropriate of their Head of FAAM of confirmed access to FAAM facilities following consideration by the FAAM Ops Committee of the project requirements, and agreement on cost of such access.
- ## **6.7 BAeS Private Venture Access with FAAM Support**
- 6.7.1 BAeS Private Venture access requiring FAAM support will be by agreement between Head of FAAM and BAeS Contract Manager and supported by the arrangements outlined in 5.6 on the basis of available aircraft time and any FAAM support or resourcing that may be required, and within the constraints

of the NERC/BAES Contract for the Provision and Operation of an Instrumented Atmospheric Research Aircraft.

6.7.2 In the case of FAAM input being required, the cost of such a contribution will be determined by the Partners and appropriate financial benefits agreed.

7. General

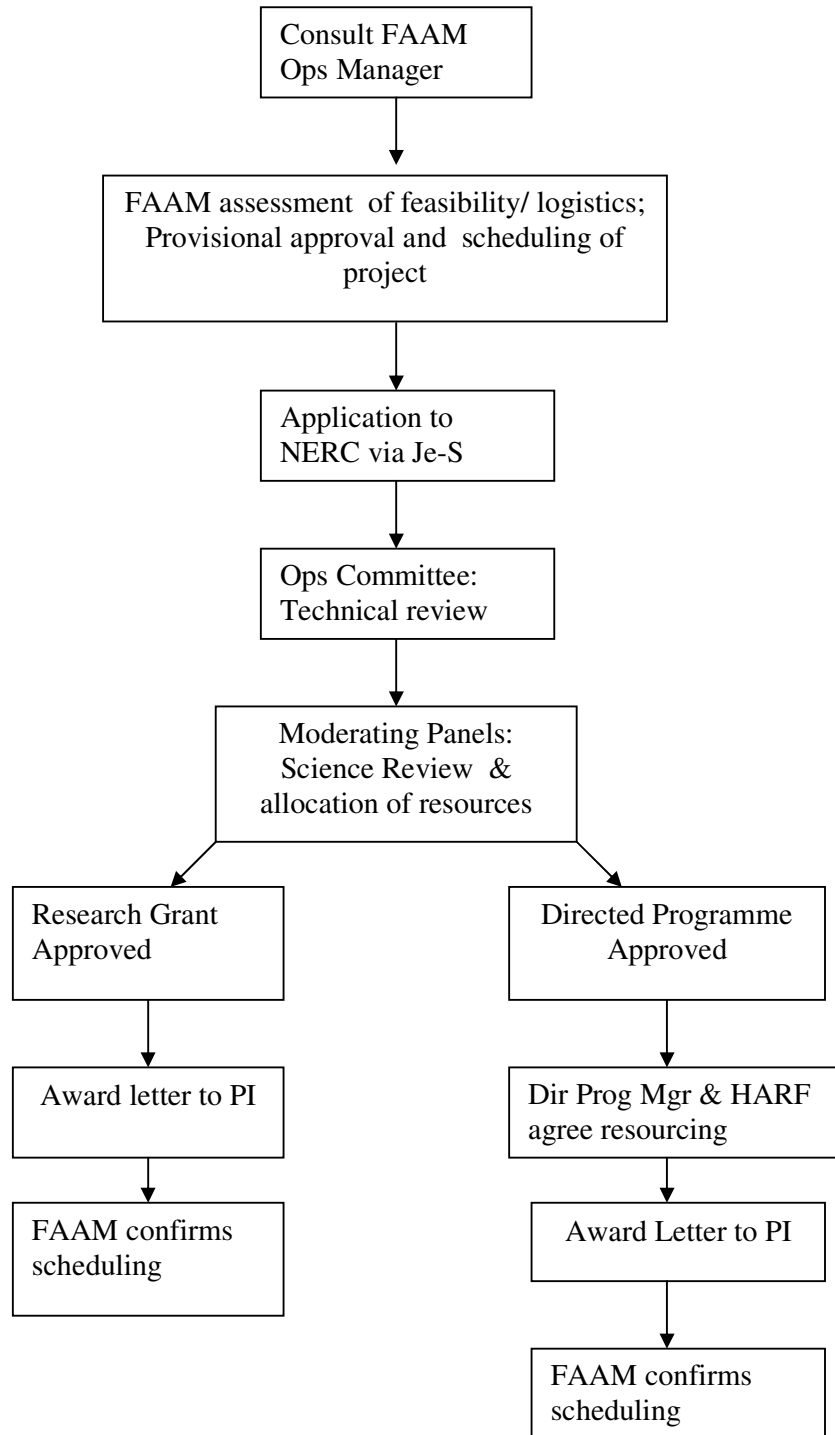
- 7.1 In the case of direct access projects conflicting with Grant/RP projects then the Operations Committee will consider the potential impact on strategic NERC science before confirming direct access projects.
- 7.2 Should the Operations Committee be unable to reconcile conflicting demands for user access by NCAS and NERC-supported projects, the Operations committee will assign priority according to α -grade with $\alpha 5$ projects taking precedence over $\alpha 4$ projects.
- 7.3 Conflict in demand between NERC/NCAS and Met Office projects will normally be assessed and resolved by the Operations Committee. Should this not be achieved then access will be settled by negotiation between the Director of NCAS, NERC Project Manager and Met Office Project Managers with advice from the Chairman of the Operations Committee. Resolution of any remaining impasse will be via the FAAM Board and then via the dispute arrangements set out in the contract.
- 7.4 The levels of contributions to be made by each Partner to NERC/MO collaborative projects will be agreed in advance by NERC's Head of Airborne Research Facilities (HARF) and Met Office's Head of Observational Based Research (Hd(OBR)). The FAAM Operations Manager will alert Hd(OBR) and HARF when such projects are proposed at the preliminary stages and will maintain a record of all such arrangements.

8. Contacts

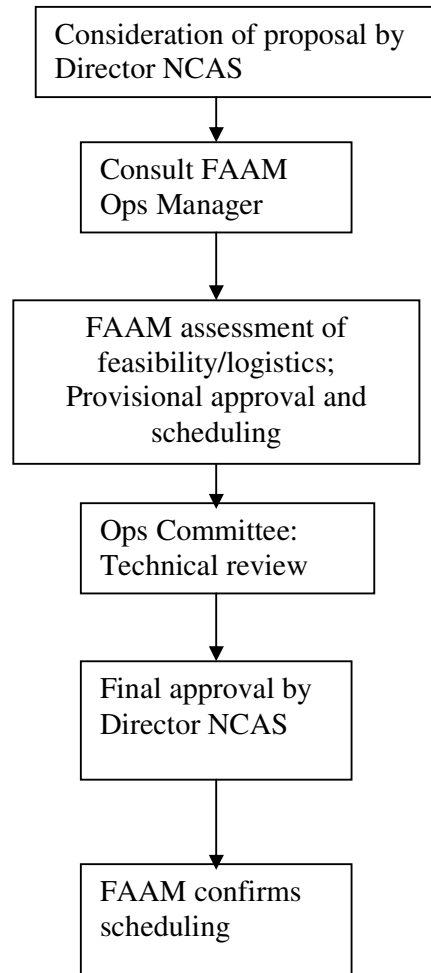
Head of FAAM: Dr Guy Gratton Tel: 01234 754 411 Fax: 01234 754 434 Email: guat@faam.ac.uk	FAAM Operations Manager Ms Maureen Smith Tel: 01234 754 865 Fax: 01234 754 434 Email: masmi@faam.ac.uk	Head Observational Based Research (Met Office): Mr Roy Kershaw Tel: 01392 886 136 Fax: 01392 361 072 Email: roy.kershaw@metoffice.gov.uk
Director NCAS Prof Stephen Mobbs Tel: 0113 343 5158 Fax: 0113 343 6716 Email: Stephen@env.leeds.ac.uk	Head Airborne Research Facilities (NERC) Mr Peter Purcell Tel: 01793 411649 Fax: 01793 411610 Email: ppu@nerc.ac.uk	

APPENDIX 1: FAAM Access Flowcharts

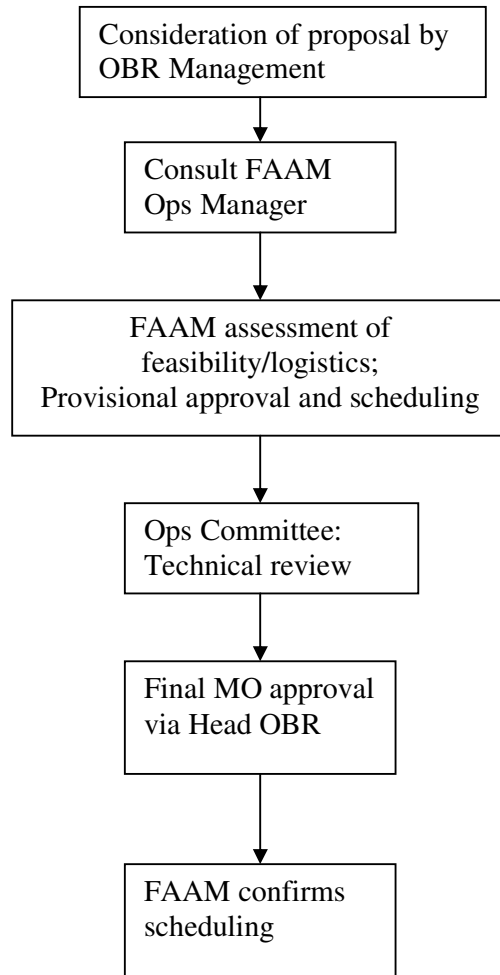
1. Research Grants and Research Programmes



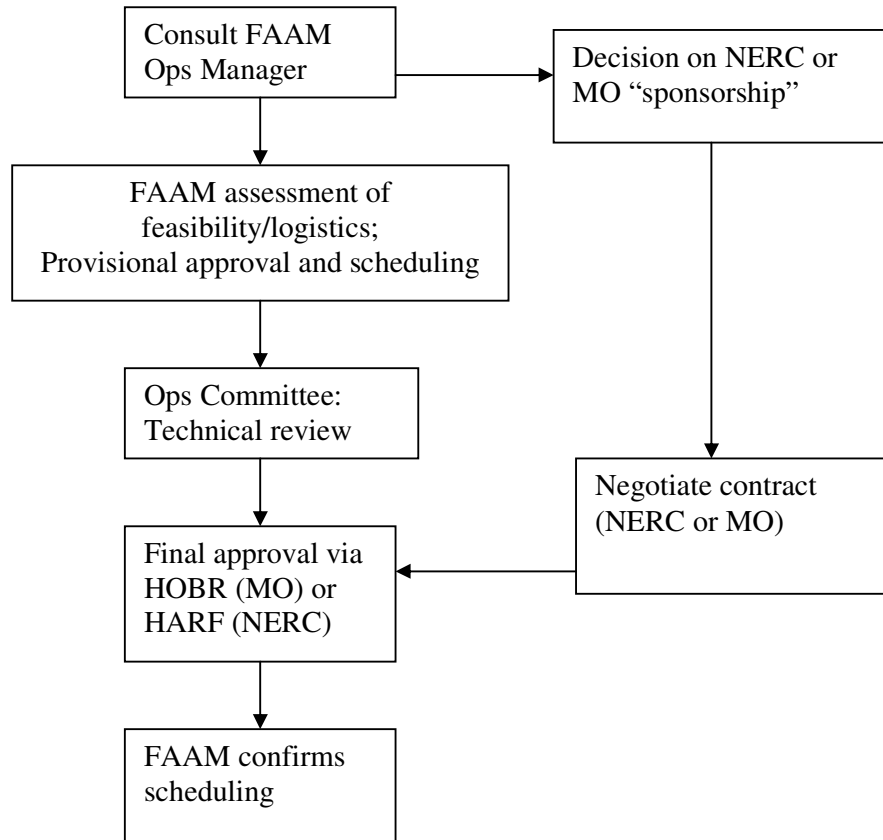
2. National Centre for Atmospheric Sciences Programmes



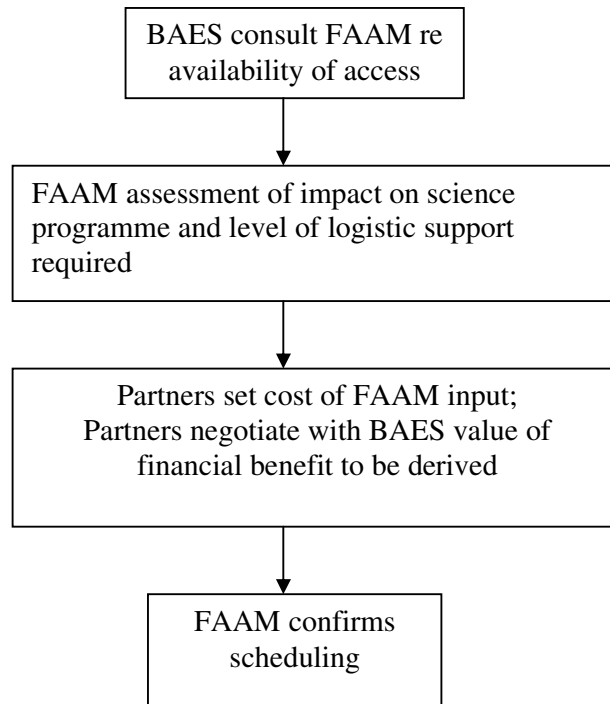
3. Met Office Programmes



4. Direct Access Programmes



5. BAES Private Venture Access with FAAM Support



Authorised for use

P W Purcell
 Head, NERC Airborne Research Facilities

Amendment Record

<u>Issue</u>	<u>AL</u>	<u>Date</u>	<u>Pages</u>	<u>Notes</u>
1	0	20 Jan 2010	18	Initial issue (replacing earlier unreferenced documents.)

References

¹ <http://www.nerc.ac.uk/funding/application/researchgrants>

² www.nerc.ac.uk/funding/application/fellowships/